# FURUNO®

# NAVTEX

**Dual-channel NAVTEX Receiver**

Message display with printer

# NX-700-A

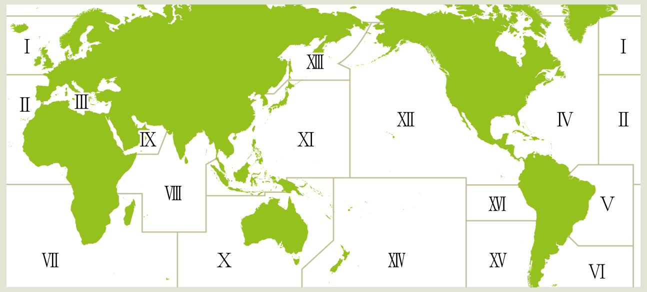
Message display unit

# NX-700-B



## NAVTEX system operation

The world is divided into 16 areas (called Navareas) as shown at right.
Each Navarea has multiple NAVTEX stations and each NAVTEX station has an identification code, from "A" to "Z."
The service range of a NAVTEX station is typically 200-400 nautical miles depending on the terrain and station transmit power. A NAVTEX station normally broadcasts every four hours.
There are two channels including international channel, 518 kHz, and local channels, 490 and 4209.5 kHz. International channels broadcast messages in English. On local channels, 490 kHz, is available in the UK, France, etc., using their own languages. 4209.5 kHz is allocated for NAVTEX broadcasts in tropical areas - not widely used at the moment.




## SPECIFICATIONS

### NAVTEX RECEIVER

| | |
|---|---|
| Receiving Frequency | 518 kHz and 490 or 4209.5 kHz |
| Mode of Reception | F1B |
| Sensitivity | 2 µV e.m.f. (50 ohms), 4% error rate |
| Input Protection | Withstands 30 Vrms for 15 min or more (w/ preamp unit) |
| Spurious Emission | 1 nW or less |
| Message Category | A : Navigation warning<br>B : Meteorological warning<br>C : Ice report<br>D : Search and rescue information/ piracy and armed robbery<br>E : Meteorological forecast<br>F : Pilot message<br>G : Decca message<br>H : Loran-C message<br>I : Omega message<br>J : Differential omega message<br>K : Other electronic navigational aid and system message<br>L : Navigational warning (additional)<br>M to Y : Reserved - presently not used<br>V : Notice to Fishermen (US only)<br>Z : QRU (no message on hand) |

### DISPLAY

| | |
|---|---|
| Screen Size | 5" monochrome LCD, 76 x 100 mm |
| Resolution | 240(H) x 320(V) |
| Display Modes | Message, List, NAV Data |
| ID Storage | 200 x 2 channels |
| Message Storage | 200 messages x 2 channels (100,000 characters x 2 channels) |

### PRINTER SECTION (for NX-700-A)

| | |
|---|---|
| Printing System | Line thermal head printing system |
| Printing Paper | Thermal paper (58 mm x 30 m) |
| Printing Width | 48 mm |
| Character Format | 24 x 12 dot |
| Dot Pitch | 8 dots/mm |
| Number of Characters | 32 characters/line |
| Print Speed | 20 mm/sec. |

### ANTENNA UNIT

| | |
|---|---|
| Antenna Type | NX-7H: H-field antenna with preamp |
| Output Impedance | 50 ohms |
| Power Supply | +8 V to +9 V (thru co-ax cable) |

### INTERFACE

| | |
|---|---|
| Input | IEC61162-2<br>ACK, GGA, GLL, GNS, NMK, NRQ, RMC, VBW, VHW, VTG, ZDA |
| Output | IEC61162-2 message data for INS, PC<br>ALR, NRX<br>RS-232C for printer(NX-700-B only) |
| Alarm | Contact closure signal (max. 0.5A, 50V) for SAR alert |

### POWER SUPPLY

| | |
|---|---|
| NX-700-A: | 12-24 VDC, 1.5-0.8 A |
| NX-700-B: | 12-24 VDC, 0.7-0.4 A |

### ENVIRONMENT (fully complied with IEC 60945 3rd/4th ed.)

| | |
|---|---|
| Temperature | |
| Antenna Unit: | -25°C to +70°C (-13°F to +158°F) |
| Receiver, Display Unit: | -15°C to +55°C (5°F to +131°F) |
| Waterproofing | |
| Antenna Unit: | IP66 |
| Receiver Unit: | IP20 |
| Display Unit: | |
| NX-700-A | IP20 |
| NX-700-B | IP25 (front panel) |

## EQUIPMENT LIST

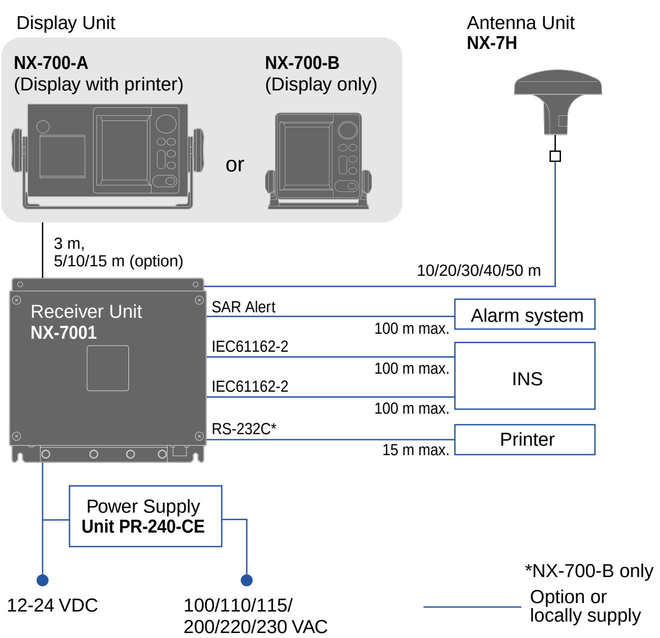
**Standard**

1. Receiver Unit NX-7001 — 1 unit
2. Antenna Unit NX-7H — 1 unit
3. Display Unit with Bracket (Specify when ordering) — 1 unit
   NX-700-A: Display with Printer, NX-700-B: Display only
4. Installation Materials and Spare Parts — 1 set

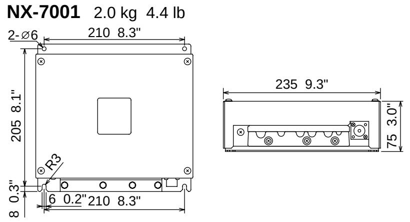
**Option**

1. Antenna Mounting Base
   Pipe mount: CP20-01111
   Deck mount: 13-QA330
   Handrail mount 13-RC5160
   Offset bracket: 13-QA310
2. Cable for Antenna
   3D2V,10/20/30/40/50 m;
   RG10U, 30/40/50 m
3. Cable for Display Unit
   D-Sub 25P to D-Sub 25P, 5/10/15 m
4. Flush Mount Kit for Display Unit
   for NX-700-A: OP08-19
   for NX-700-B: OP08-20
5. Power Supply Unit PR-240-CE
6. Thermal Paper for NX-700-A

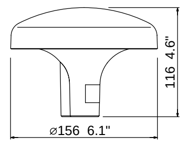
## INTERCONNECTION DIAGRAM



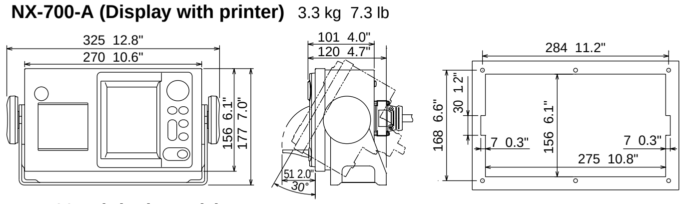

**Receiver Unit**
**NX-7001** 2.0 kg 4.4 lb



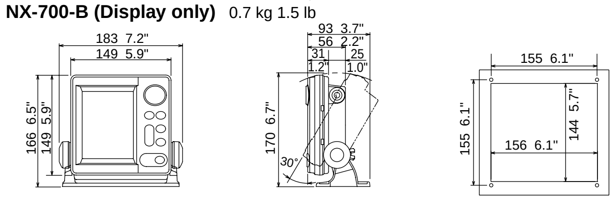

**Antenna Unit**
**NX-7H** 0.6 kg 1.3 lb




**Display Unit**
**NX-700-A (Display with printer)** 3.3 kg 7.3 lb




**NX-700-B (Display only)** 0.7 kg 1.5 lb






**FURUNO U.S.A., INC.**
Camas, Washington, U.S.A.
Phone: +1 360-834-9300
Fax: +1 360-834-9400

**FURUNO (UK) LIMITED**
Denmead, Hampshire, U.K.
Phone: +44 2392-230303
Fax: +44 2392-230101

**FURUNO FRANCE S.A.**
Bordeaux-Mérignac, France
Phone: +33 5 56 13 48 00
Fax: +33 5 56 13 48 01

**FURUNO ESPAÑA S.A.**
Madrid, Spain
Phone: +34 91-725-90-88
Fax: +34 91-725-98-97

**FURUNO DANMARK AS**
Hvidovre, Denmark
Phone: +45 36 77 45 00
Fax: +45 36 77 45 01

**FURUNO NORGE A/S**
Ålesund, Norway
Phone: +47 70 102950
Fax: +47 70 127021

**FURUNO SVERIGE AB**
Västra Frölunda, Sweden
Phone: +46 31-7098940
Fax: +46 31-497093

**FURUNO FINLAND OY**
Espoo, Finland
Phone: +358 9 4355 670
Fax: +358 9 4355 6710

**FURUNO POLSKA Sp. Z o.o.**
Gdynia, Poland
Phone: +48 58 669 02 20
Fax: +48 58 669 02 21

PRINTED WITH SOY INK 05055U Printed in Japan

The future today with FURUNO's electronics technology.

**FURUNO ELECTRIC CO., LTD.**
9-52 Ashihara-cho, Nishinomiya City, Japan Phone: +81 (0)798 65-2111
Fax: +81 (0)798 65-4200, 66-4622 URL: www.furuno.co.jp

Catalogue No. FX-619

# NAVTEX

*Dual-channel NAVTEX Receiver*

# *Enhances the navigation efficiency and safety by watching NAVTEX messages broadcasted on both international and local channels*

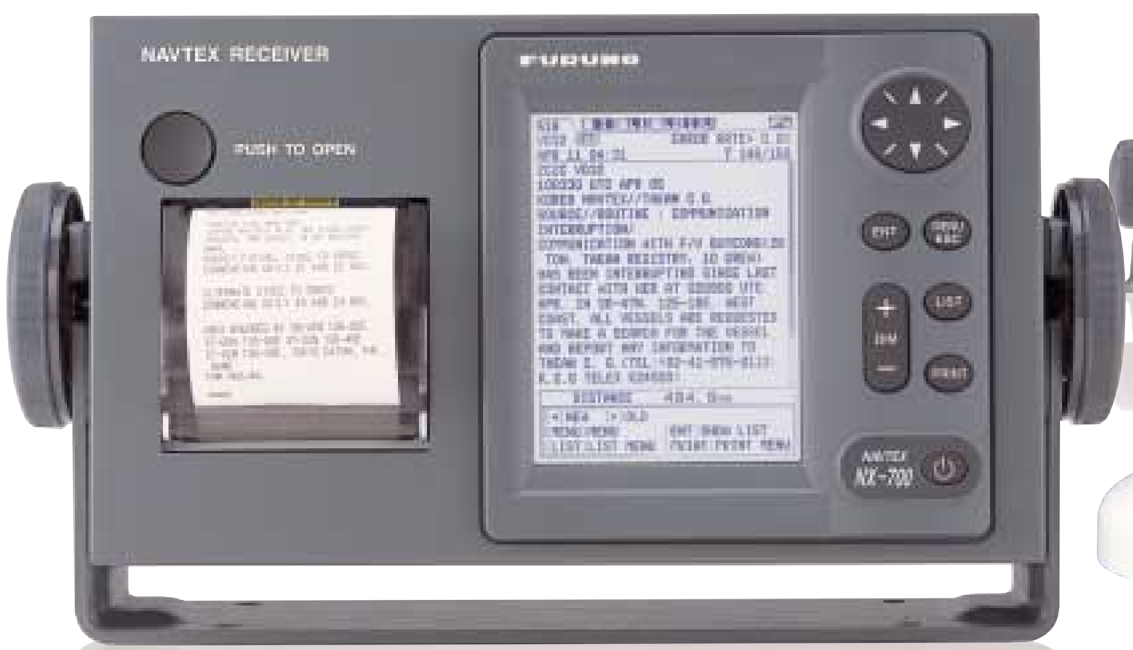


FURUNO NX-700 is a dual-channel NAVTEX receiver for SOLAS ships complying with the new NAVTEX performance standard MSC.148(77) which is implemented on and after 1 July 2005.

The NX-700 can receives two channels simultaneously. One is set for 518 kHz to receive international NAVTEX messages and another is selectable from 490 or 4209.5 kHz for domestic or local NAVTEX messages. These messages include a variety of safety information such as Navigational Warnings, Meteorological Warnings, Search and Rescue (SAR) information and other information for ships sailing within the reach of each service station's coverage. The broadcast station can be selected automatically according to own ship position when the NX-700 is connected with a GPS navigator.

Every incoming message is stored in non-volatile memory and is displayed on the clear 5" silver bright LCD. Three different font sizes are available and one of them can be selected on menu.

The NX-700-A consists of a receiver, display with printer and antenna units. The NX-700-B has a low profile, stylish display without a printer, receiver and antenna units. The compact umbrella type antenna requires no grounding because it is H-field antenna. In addition, the antenna incorporates a high-performance preamp within the compact body, which gives reliable and uninterrupted reception without an extra whip antenna.




**NX-700-A** (Display with printer)




**NX-700-B** (Display only)




Antenna Unit



Receiver Unit

*Dual-channel NAVTEX Receiver*

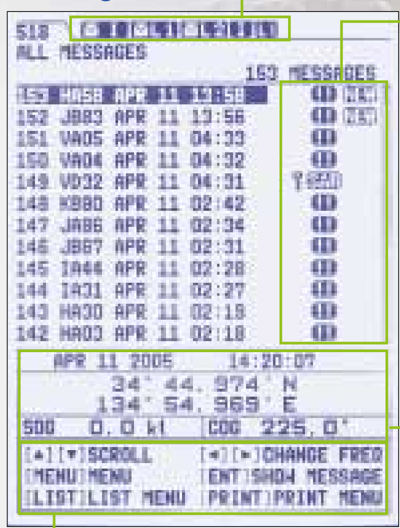
# NX-700-A/B

- **Fully meets new IMO resolution MSC.148(77) to be implemented on and after 1 July 2005 requiring:**
  - **Dual channel reception, 518 kHz and either 490 or 4209.5 kHz, simultaneously**
  - **Incorporates a printing device (NX-700-A) or a dedicated display device with printer output (NX-700-B)**
  - **200 message of average length 500 characters can be stored in non-volatile memory**
- **Incorporates a preamp within a lightweight, compact antenna for reliable, uninterrupted reception**
- **Display messages on a clear 5" silver bright LCD**
- **Low power consumption**
- **NAV data display acts as NMEA repeater for GPS or instruments**




Operators can print out important messages by pressing a dedicated "PRINT" button.

## Message inbox



Status icons

Message icons

Guide for key controls

All received messages with a selected channel information are sorted by order of time in the message inbox. Operators can easily know the status of each message from the message ID and icons. When receiving SAR information, NX-700 notifies of the incoming messages by audible alarm. For quick viewing, operators can pick up messages they are interested in and display them by using the sort function.

**NavData window**
Essential navigational data is clearly displayed at the bottom of display when connected with a positioning equipment.

### Icons

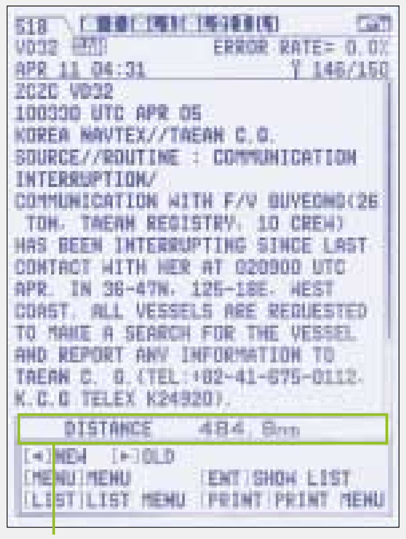
**Status icon**

| | |
|---|---|
| ✉ I | Shows that an International frequency (518 kHz) message has not been read. |
| ✉ L1 / ✉ L2 | Shows that a Local frequency message has not been read.<br>L1: 490 kHz, L2: 4209.5 kHz |
| I / L1 / L2 | Displayed while the NAVTEX is receiving a message.<br>I: International frequency (518 kHz),<br>L1 : 490 kHz, L2: 4209.5 kHz |
| (battery icon) | Displayed when the battery voltage is low. |
| X | Print error<br>(no paper, not connected to the printer, etc.) |
| PR | While printing. |

**Message icon**

| | |
|---|---|
| NEW | Displayed when message has not been read yet. |
| SAR | Displayed when message type D (SAR) is received. |
| !! | Displayed when message type A. B or L (Warning) is received. |
| (protect icon) | Protected message |

## Message display



**Distance window**
Shows distance from own ship to a position of event, which is mentioned in message. This enables swift understanding of whether the position is nearby own ship or not.

### Message format

Message ID

**ZCZC b1 b2 b3 b4**

- ZCZC: Start code (sync)
- b1: Station ID — "A"-"Z"
- b2: Type of message — "A"-"Z" (See the list below.)
- b3 b4: Serial number — "00":Emergency message; "01"-"99":Normal message

**main message** — Main message

**NNNN** — Termination code

### Fonts



Small (38 characters x 19 lines) | Medium (32 characters x 16 lines) | Large (19 characters x 9 lines)

Three font sizes are available for convenience of the operation.

### Type of message (category)

| | | | |
|---|---|---|---|
| A | Navigational warning | I | OMEGA message |
| B | Meteorological warning | J | Differential OMEGA message |
| C | Ice report | K | Other electronic navigational aid system message |
| D | Search and rescue information/ piracy and armed robbery | L | Navigational warning (additional) |
| E | Meteorological forecast | M to U | Reserve-presently not used |
| F | Pilot message | V | Notice to Fishermen (U. S. only) |
| G | DECCA message | W to Y | Reserve-presently not used |
| H | LORAN-C message | Z | QRU (no message on hand) |